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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/523,820	03/13/00	FETCENKO	M OBC-99

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EXAMINER

NGUYEN, C

ART UNIT	PAPER NUMBER
1754	3

DATE MAILED: 04/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/523,820

Applicant(s)  
Fetcenko et al.

Examiner  
Cam Nguyen

Group Art Unit  
1754



☒ Responsive to communication(s) filed on Mar 13, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-89 is/are pending in the application.

Of the above, claim(s) 56-70 and 80-89 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-55 and 71-79 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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### DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-55 & 71-79, drawn to a catalyst, classified in class 502, subclass 300+.
  - II. Claims 56-70, drawn to a method of making a catalyst, classified in class 502, subclass 104+.
  - III. Claims 80-89, drawn to a fuel cell, classified in class 429, subclass 223+.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process, such as by using impregnation method or pray pyrolysis technique.
3. Inventions I and III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be *useful as a membrane for separation or purification of exhaust gases*

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and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II or III, etc. and have acquired a separate status in the art as shown by their different classification, and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with attorney *Philip H. Schlazer* on *April 18, 2001* a provisional election was made *without traverse* to prosecute the invention of Group I, claims 1-55 & 71-79. Affirmation of this election must be made by applicant in replying to this Office action. Claims 56-70 & 80-89 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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***Claim Objections***

6. Claims 1-6, 8, 30-35, 37, & 76 are objected to because of the following informalities:

- A. In claim 1, ln 3, --of-- should be inserted before "less than".
- B. In claims 2-6 & 31-35, ln 2, "is" should be replaced with --of--.
- C. In claims 8 & 37, ln 2, --of-- should be inserted before "between".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112 (Second Paragraph)***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. In claim 9, the correct Markush terminology is "wherein said particulate comprises at least one metal selected from the group consisting of nickel and nickel alloy". See MPEP § 2173.05(h).

B. In claim 10, the correct Markush terminology is "wherein said particulate consists essentially of at least one metal selected from the group consisting of nickel and nickel alloy". See MPEP § 2173.05(h).

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***Claim Rejections - 35 USC § 102(b)***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-17, 19-23, 26-28, 30-50, & 52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatura et al., "hereinafter Hatura", (U.S Pat. 5,506,273).

Hatura discloses a catalyst comprising a metal oxide and gold. The gold is desired to be in the form of minute particles of a diameter of not more than about 0.1  $\mu\text{m}$ , preferably not more than about 10 nm (10 nm is equivalence to 100A) (see col 2, ln 22-26). The metal oxides can be used in a particulate form (see col 2, ln 26-27). Suitable metal oxides and complex oxides chosen from the metal group which includes the instantly claimed elements, such as iron, titanium, cobalt, nickel, tin, manganese, and aluminum (see col 2, ln 30-46). The gold content of the catalyst can be selected in the range between approximately 0.1 and 30% by weight, based on the total amount of the metal oxide and gold (see col 3, ln 28-32). At col 3, ln 36-42, Hatura discloses that the catalyst comprising gold and a metal oxide is deposited on a metal oxide carrier, wherein suitable metal oxide carriers include the instantly claimed zeolite and titanium dioxide. The carrier is not particularly restricted in form. It may be in any forms, such as powder spheres, granules, etc.

With respect to the recitation of "a catalyst lacking of platinum and palladium", Hatura teaches a catalyst which does not contain platinum and palladium, thus met.

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Regarding claims 2-6, 8, 31-35, & 37, the instantly claimed particle size limitations are met because Hatura teaches a particle size of less than 100A (see above), which encompasses the instantly claimed particle size ranges.

Regarding claims 7 & 36, Hatura teaches a catalyst containing between approximately 0.1 and 30% by weight (see above), thus encompasses the instantly claimed metal particulate amounts.

Regarding claims 14 & 41, it is inherent that the complex oxide disclosed by Hatura would have an fcc crystal orientation as well because the oxides (or alloy) are the same.

Regarding claims 23 & 50, it is inherent that the instantly claimed metal oxide support is within the scope of Hatura's invention since he discloses at col 3, ln 36-42 that the metal oxide carriers can be of any forms, such as powder spheres, granules, etc.

Regarding claims 27 & 53, it is inherent that the catalyst taught by Hatura would be the same because his catalyst is the same as the claimed catalyst.

Regarding claims 28 & 54, in view of the teaching in Hatura's reference at col 3, ln 31-36, the metal particulate is uniformly distributed throughout the support material.

***Claim Rejections - 35 USC § 102(b)/103***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 29, 55, & 71-79 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hatura et al., "hereinafter Hatura", (U.S. Pat. 5,506,273).

Hatura discloses a catalyst as discussed above.

While Hatura does not teach to make his product by the same process as applicants', the product made is the same. It has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even the prior art product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 25 & 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatura et al., "hereinafter Hatura", (U.S Pat. 5,506,273), as applied to claims 1-17, 19-23, 26-28, 30-50, & 52-54, above, and further in view of Tsou et al., "hereinafter Tsou", (U.S Pat. 5,171,644).

Hatura discloses a catalyst as discussed above, except for the instantly claimed support containing carbon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the instantly claimed support for the catalyst of Hatura, because it is a useful catalyst support as evidenced by Tsou (see Tsou at col 2, ln 42-43).

15. Claims 18 & 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatura et al., "hereinafter Hatura", (U.S Pat. 5,506,273), as applied to claims 1-17, 19-23, 26-28, 30-44, 47-50, & 52-54, above, and further in view of Flytani-Stephanopoulos et al., "hereinafter Flytani-Stephanopoulos", (U.S Pat. 4,729,889).

Hatura discloses a catalyst as discussed above, except for the instantly claimed microcrystalline metal oxide support, and a support containing manganese oxide.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the instantly claimed support material for the catalyst of Hatura, because it is known in Flytani-Stephanopoulos (see Flytani-Stephanopoulos at col 22, claim 7). One of ordinary skill in the art would be motivated to use this known support material for the catalyst of

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Hatura because it has a high H<sub>2</sub>S removal efficiency and better sorbent stability (see Flytani-Stephanopoulos at col 4, ln 19-21 & col 4, ln 67- col 5, ln 3).

### *Citations*

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Creighton et al. (U.S Pat. 5,192,734), Benczur-Urmossy et al. (U.S Pat. 4,051,305), Utz et al. (U.S Pat. 5,168,088), Hansford (U.S Pat. 3,963,644), Venkatesan et al. (U.S Pat. 4,728,586), Culross (U.S Pat. 5,928,983), Rivas et al. (U.S Pat. 5,648,312), Kleinsorgen et al. (U.S Pat. 5,858,061), & Abdo et al. (U.S Pat. 5,906,731) are cited for related art.

### *Conclusion*

17. Claims 1-89 are pending. Claims 1-55 & 71-79 are rejected. Claims 56-70 & 80-89 are withdrawn due to nonelected (distinct) inventions. No claims are allowed.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:00 am. to 5:30 pm.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn

April 21, 2001

  
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